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(54) **METHODS AND SYSTEMS FOR DETECTING WEATHER CONDITIONS INCLUDING FOG USING VEHICLE ONBOARD SENSORS**

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See application file for complete search history.

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(57) **ABSTRACT**

Methods and systems for detecting weather conditions including fog using vehicle onboard sensors are provided. An example method includes receiving laser data collected from scans of an environment of a vehicle, and associating, by a computing device, laser data points of with one or more objects in the environment. The method also includes comparing laser data points that are unassociated with the one or more objects in the environment with stored laser data points representative of a pattern due to fog, and based on the comparison, identifying by the computing device an indication that a weather condition of the environment of the vehicle includes fog.

18 Claims, 6 Drawing Sheets